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The Analyst

CURRENT AFFAIRS Handout

31st August 2025



CONTEXT: Government has brought **BioE3 Policy** for development of **Active Pharmaceuticals Ingredients** required for development of key medicines

Heading 1: The Pharmacy of the World

"Industry's advancements in biologics, specialty generics and AI-driven technologies are redefining healthcare solutions worldwide"

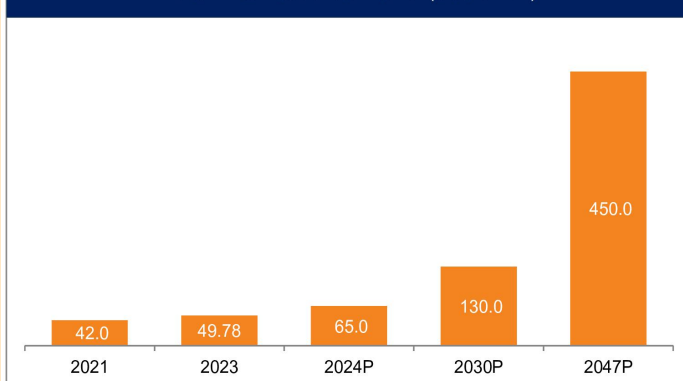
3rd largest in terms of Volume
& 11th largest in Value

Over 3000 Pharma companies
& 10,500 drug manufacturing
facilities

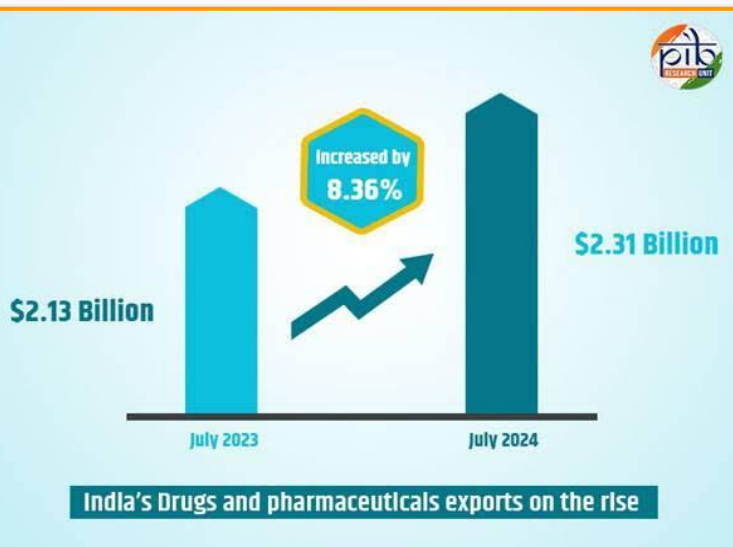
Accounting for more than 20%
of Global Supply

- Producing >60% of Global demand for Vaccines
- Sells pharmaceuticals to >200 countries
- Highest no. Of USFDA approved plants outside USA
- Exports in 2024 : \$27.85 Billion
- Projections : \$130 billion exports by 2030
- \$1 Trillion Industry by 2047

Indian Pharmaceutical Market (US\$ billion)



Source: EY Report, Note: P - Projected



BioE3 Policy Push



CONTEXT: Government has brought **BioE3 Policy** for development of **Active Pharmaceuticals Ingredients** required for development of key medicines

Heading 2 : Undermining the Potential of World's Pharmacy :

Issues with Drugs Cosmetics Act 1940:

Setting up responsibilities
at **multiple channels**

SFDA : Non - Mandatory to
disclose inspection reports

Creeping Corruption :
Easy licensing & approvals

Shortage of Drug inspectors

Penalty for Non -
Implementation of **GMP**

the hindu <https://www.thehindu.com>

The Indian cough syrups they bought
were toxic. Now Gambian parents
seek justice

Inspections & Prosecutions By State Drug Regulatory Authorities				
State / UT	inspections	Non-compliant	Prosecutions	Prosecutions (As % of non-compliant cases)
Jammu and Kashmir	27,520	0	0	0%
Jharkhand	8,966	1723	7	0.4%
Uttar Pradesh	907	0	0	0%
Odisha	6,260	876	6	0.6%
Mizoram	1,205	141	4	2.8%
Telangana	16,575	3,853	0	0%
Uttarakhand	1,858	0	0	0%
Andaman and Nicobar	120	0	0	0%
Daman and Diu	407	19	0	0%

Source: Drug Regulation in India: The Working and Performance of CDSCO and SDRAs report, 2019

BioE3 Policy Push

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Heading 2 : Undermining the Potential of World's Pharmacy :

Issue of "Multiple Regulations" :
Passing the bucket of blame

Indulging in "Profiteering" :
Patent Act of 1970

Selling of Unapproved drugs

Medical illiteracy &
Over the counter medicine uses

75% health expenditure
is OoPE

>50% of OoPE is done on
Pharmaceuticals

>4% of Personal disposable
income is spent on Medicines

Most of high priced medicines
are found only in private
market

Over 10 million people fall into
poverty every year

Heading 2 : Undermining the Potential of World's Pharmacy :

Demographic Winter :

NPOP 1999 : "People aged 60 years & above"

2024 : 10% of Population (WPR 2023)

2050 : 20% of Population

42 million more women than men in the age group

22% of Elderly population face Poverty & 19%
doesn't have any source of income

COMMON CITATIONS BY THE US FDA FOR INDIAN PHARMA MANUFACTURING PLANTS*



Absence of written
procedures



Lack of scientifically sound
laboratory controls



Procedures for sterile drug
products not established, written
and followed



Lack of training and education
for employees engaged in
manufacturing processes



Equipment and utensils are not
cleaned, maintained and sanitised
at appropriate intervals

*Plants in India
SOURCE US FDA Database

BioE3 Policy Push

CONTEXT: Government has brought **BioE3 Policy** for development of **Active Pharmaceuticals Ingredients** required for development of key medicines

Heading 2 : Undermining the Potential of World's Pharmacy :

90% reliance on Essential antibiotics like Penicillin & Azithromycin

Reason for Reliance

- **Cost efficient production by China**
- **Government subsidies & strong infrastructure**
- **High cost, regulatory delays & infrastructure gaps in Indian supply chain**

Impact

- **Supply chain vulnerabilities**
- **Rising cost & price volatility**
- **Dependency risks leads to reduced Export competitiveness**

BREAK DOWN

What is API?

API or active pharmaceutical ingredient is the main raw material chemical used in a medicine

India imports around **80-85%** of API from China



- API accounts for around **10%** of India's **₹79,000-crore** pharma market
- In 2007, they accounted for **15-20%** of the **₹35,000-cr** domestic pharma industry
- Companies like Sun Pharma, Lupin and Dr Reddy's Labs manufacture APIs mostly for captive usage
- Most Indian companies are importing API from China at **15-20%** lower cost

Heading 3 : Steps taken by GOI :

Section 83 of Patent Act :
Promote innovations

PLI scheme for complex generics & high value added medicines

100% FDI through Automatic route

CDSCO :
Get NOC for exports from Zonal Office

Steps taken so far

Bulk Drug Parks for Specialised Industrial Zones

NIPER : Advanced research in Bio - Pharma & Repurposed drugs




BioE3 Policy Push

CONTEXT: Government has brought **BioE3 Policy** for development of **Active Pharmaceuticals Ingredients** required for development of key medicines

Heading 3 : Steps taken by GOI :

BioE3 Policy : 16 Biomanufacturing hubs to make 1,000 products

Today's
Editorial :
Steps Taken

Production of Fermentation based medicines & Biofuels

Scaling up innovative solutions like Novel monoclonal antibody treatments

Proof of concept to Market ready products

Biomanufacturing hubs in research institutes & private companies

EXPLAINED

E BioE3 policy push

WITH THE biomanufacturing hubs under the programme, critical ingredients for medicines, reagents needed for various products such as bio-fuels, bioproteins, and other chemicals for which India depends on imports, will be manufactured within the country. The Department of Biotechnology has undertaken a survey to finalise a list of 1,000 such products, which start-ups and companies may develop processes to manufacture within the country.

Mains Practise Question

Question : Question : What are the key challenges being faced by the Indian Pharmaceutical Industry? Provide suggestive measures that shall be adopted to ensure India's status as "Pharmacy of the World".
(15 Marks, 250 words)



Shanghai Cooperation Organisation

CONTEXT: The Prime Minister's much anticipated meeting with **China's President at SCO** comes amid marked improvement in India - China ties against the **US President Trump's tariff war**

Shanghai Cooperation Organisation (SCO)

Context of the News

Prime Minister Narendra Modi arrived in Tianjin on Saturday, for his first visit to China since 2018. He is set to hold bilateral meetings with Chinese President Xi Jinping, Russian President Vladimir Putin, and several other leaders before attending the Shanghai Cooperation Organisation summit on Monday.

Tianjin, China

Largest SCO meet : Attended by 20+ Head of States

2nd meet after BRICS, Kazan

Counterweight to "Western Dominance"

PM Modi greets Chinese officials after landing in China on August 30, held in Beijing on August 31, to Credit:

Long term "Utopia": SCO Free Trade zone



Shanghai Cooperation Organisation (SCO)

Shanghai Cooperation Organization (SCO)



It is an international political, security, and economic organization that was established in Shanghai on June 15, 2001. It consists of nine member states (Uzbekistan, Pakistan, Russia, China, Tajikistan, Kyrgyzstan, Kazakhstan, India, and Iran), three "observer states" that desire full membership, and six "dialogue partners." The organization prioritized economic integration, regional security issues, combating regional terrorism, ethnic separatism, and religious extremism.



مركز البلقاء للدراسات والتخطيط
Al-Balqa Center For Studies And Planning

Belarus joined in 2024

"Eurasian Political, Economic & International Security Organisation":

Established in 2001 & India joined in 2017

Importance : 24% area, 42% population & 23% GDP

Official languages : Russian & Chinese

Heads of State Council

Regional Anti - Terror Structure (RATS)



Shanghai Cooperation Organisation

CONTEXT: The Prime Minister's much anticipated meeting with **China's President at SCO** comes amid marked improvement in India - China ties against the **US President Trump's tariff war**

Issue 1: Trade Deficit :

- July 2025 : India's Imports : \$113 Billion - India's Exports : \$14.25 Billion
- Trade Deficit : \$1.1 Billion in 2004 to \$99 billion in 2024
- China's trade deficit = 35% of India's total trade imbalance
- Why so serious?

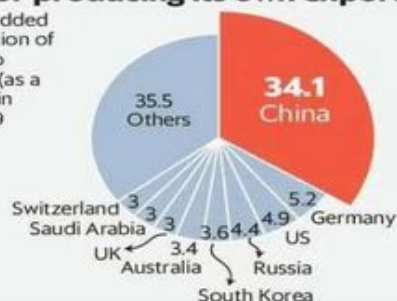
Issue 2: Creation of "Critical dependence":

- Antibiotics = 97% supply of Erythromycin
- Electronics = 86% of flat panel displays & 80% of Laptops
- Renewable Energy = 82% of solar cells & 75% of Lithium ion batteries

India - China Backdrop : The Prevailing Issues :

GTRI : "Overwhelming dominance gives Beijing potential leverage against India turning supply chains into a tool of pressure in times of political tension"

Chart 3a
India depends most on Chinese imports for producing its own exports
Foreign value-added (FVA) contribution of each country to India's exports (as a % of total FVA in exports) in 2019



India - China Backdrop : The Prevailing Issues :

Impact of Rising Trade Deficit :

China Targets India's Manufacturing Sector, Delays Machinery Delivery, Pulls iPhone Engineers

Cheaper imports hurts local manufacturers

Pressure on foreign exchange reserves

Currency depreciation pushes cost of imported goods

Reduce Incentive to build domestic capacity in key sectors

What has been India's Response?

India imposes anti-dumping duty on six Chinese products

Role of DGTR

PLI Scheme for 14 sectors

"China + 1" Strategy

Stricter Quality Standards

CONTEXT: The Prime Minister's much anticipated meeting with **China's President at SCO** comes amid marked improvement in India - China ties against the **US President Trump's tariff war**

India - China Backdrop : The Prevailing Issues :

The Conflict on the Border :



China constructing model villages opposite the LAC, say sources

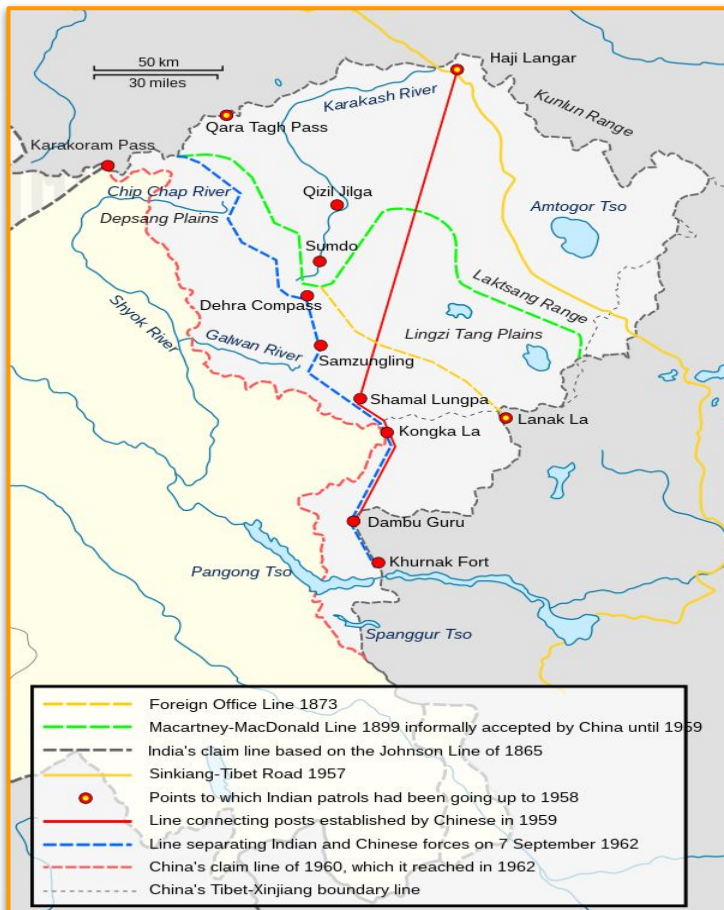
26 May 2023 – China is continuing to expand the network of model villages or 'Xiaokang' (moderately prosperous) villages opposite the Line of Actual ...

Johnson Line v. MacDonald Line

Eye on Strategic 39 Patrolling stations

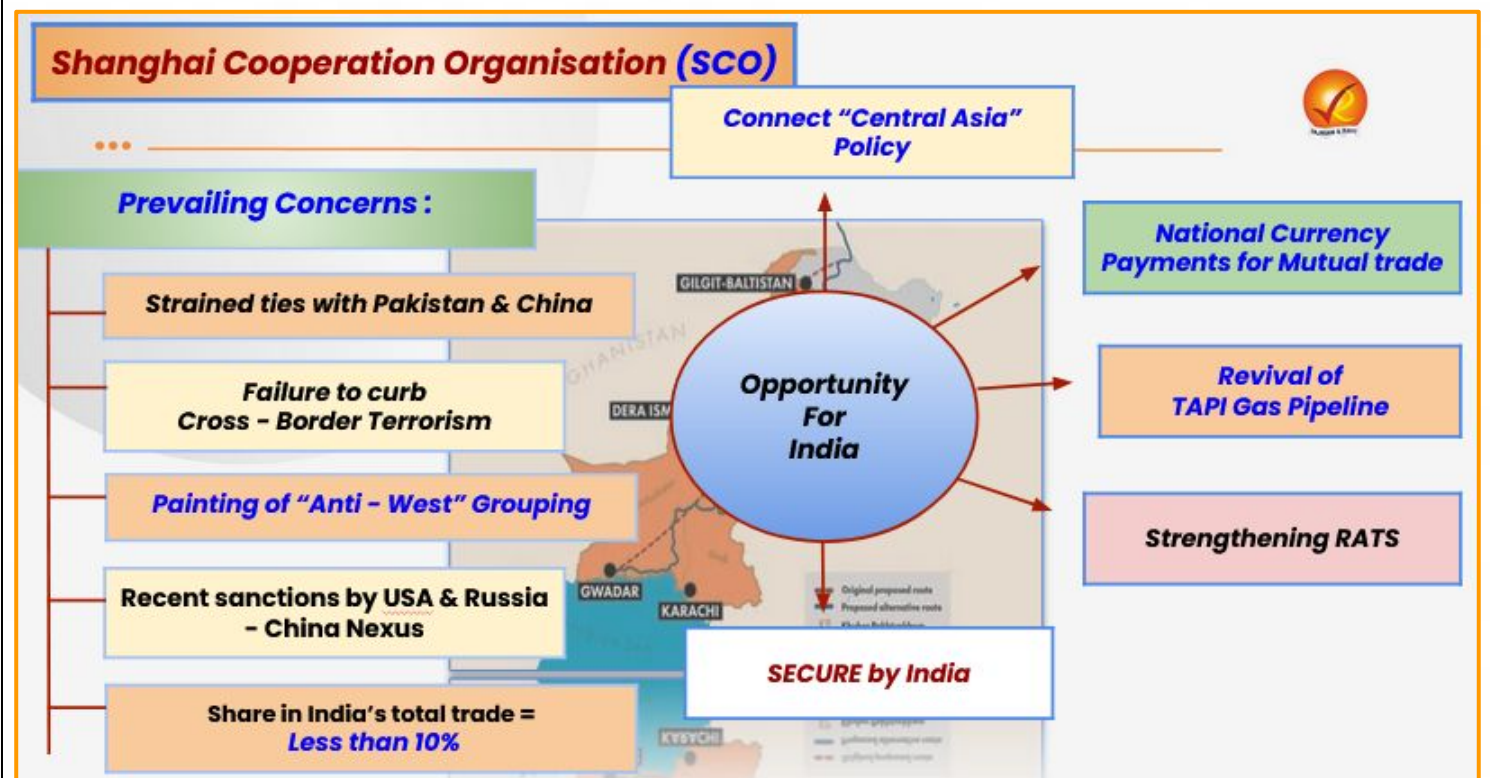
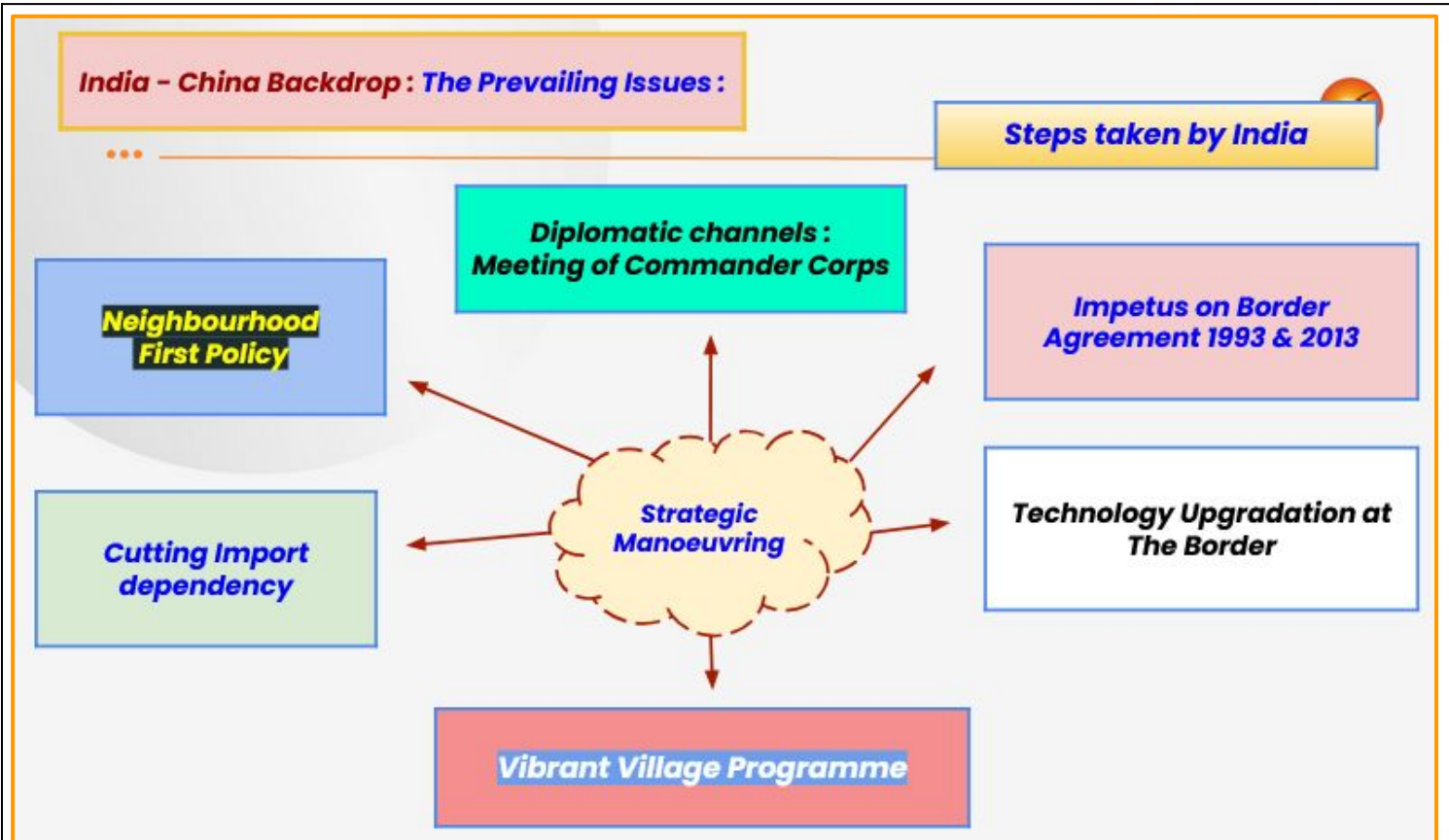
Salami Slicing Strategy

Quantum jump in presence & Surveillance



Shanghai Cooperation Organisation

CONTEXT: The Prime Minister's much anticipated meeting with **China's President at SCO** comes amid marked improvement in India - China ties against the **US President Trump's tariff war**



Shanghai Cooperation Organisation



CONTEXT: The Prime Minister's much anticipated meeting with **China's President at SCO** comes amid marked improvement in India - China ties against the **US President Trump's tariff war**

Mains Practise Question

Question : "India can not afford to Ignore China's Challenge".
In light of this statement, analyse the prevailing challenges in India- China relations and the opportunity which is offered by the regional groupings such as SCO to strengthen the relations.
(15 Marks, 250 Words)



SYLLABUS: GS 2: *Government policies & Interventions*
Newspaper : The Hindu, **Page No : 6**

Kerala to amend Wildlife Protection Law :

Context of the News

The Hindu Bureau
THIRUVANANTHAPURAM

The Kerala government is considering an amendment to the Wildlife Protection Act, 1972, for addressing specific challenges faced by the State in human-wildlife conflict, Minister for Law P. Rajeeve said. The amendment under consideration seeks to authorise the Chief Wildlife Warden "to permit any person, by following certain procedures, to kill, tran-

quillise or capture a wild animal if it attacks someone and causes serious injury or if such an animal is found in a public place," Mr. Rajeeve said.

Mr. Rajeeve was addressing a conference organised by the Kerala State Legal Services Authority and the National Legal Services Authority on Saturday.

The decision to propose the amendment is based on the legal advice that the State government is competent to propose such an

Statistics about India's Wildlife :

2.4% of World's land area yet 7-8% of all recorded species

45,000 species of plants & 91,000 animals

8th most biodiverse region

172 threatened species & 1014 protected areas

IUCN : India will become Global Hotspot for Human - Animal Conflict by 2070

Wildlife Protection Amended Act 2022 :

Chapter 4 : Protected Areas:

WLS	NP
<ul style="list-style-type: none"> State Government Collector - Determine extent of right of any person Rehabilitation & Resettlement Act 2013 	<ul style="list-style-type: none"> State Government NO Alteration of boundary - except on recommendation of National Board



SYLLABUS: GS 2: Government policies & Interventions
Newspaper : The Hindu, Page No : 6

Chapter 2 : Bodies for protection of Wildlife:

²[5A. **Constitution of the National Board for Wild Life.**—(1) The Central Government shall, within three months from the date of commencement of the Wild Life (Protection) Amendment Act, 2002 (16 of 2003), constitute the National Board for Wild Life consisting of the following members, namely:—

- (a) the Prime Minister as Chairperson;
- (b) the Minister in-charge of Forests and Wild Life as Vice-Chairperson;
- (c) three members of Parliament of whom two shall be from the House of the People and one from the Council of States;
- ³[(d) Member, NITI Aayog in-charge of Environment, Forest and Climate Change;]
- (e) five persons to represent non-governmental organizations to be nominated by the Central Government;
- (f) ten persons to be nominated by the Central Government from amongst eminent conservationists, ecologists and environmentalists;
- (g) the Secretary to the Government of India in-charge of the Ministry or Department of the Central Government dealing with Forests and Wild Life;
- (h) the Chief of the Army Staff;

Wildlife Protection Amended Act 2022 :

CHAPTER III

HUNTING OF WILD ANIMALS

[9. Prohibition of hunting.—No person shall hunt any wild animal specified in "[Schedules I and II] except as provided under section 11 and section 12.]

[10. *Maintenance of records of wild animals killed or captured.*—Omitted by the Wild Life (Protection) Amendment Act, 1991 (44 of 1991), s. 10 (w.e.f. 2-10-1991).

11. Hunting of wild animals to be permitted in certain cases.—(1) Notwithstanding anything contained in any other law for the time being in force and subject to the provisions of Chapter IV,—

- (a) the Chief Wild Life Warden may, if he is satisfied that any wild animal specified in Schedule I has become dangerous to human life or is so disabled or diseased as to be beyond recovery, by Order in writing and stating the reasons therefor, permit any person to hunt such animal or cause such animal to be hunted;

42nd CA 1972 :
Protection of Animals & Birds
was transferred to
"Concurrent List"

Article 254 (2) : State
Legislature can pass a law on
any subject of Concurrent List

Since the amendment
concerns a Central Law, Bill
would require assent of the
President under Article 201



SYLLABUS: GS 2: *Government policies & Interventions*
Newspaper: The Hindu, Page No : 6

Wildlife Protection Amended Act 2022 :

Categories of Protection :

Schedule 1	Schedule 2	Schedule 3	Schedule 4
<ul style="list-style-type: none"> • Blackbuck • Asiatic Wild Dog Dhole • Family of Cat : Cheetah, Lion, Tiger • Musk - Hog - Kashmiri Hangul - Barasingha • Elephants • Black & Blue Corals 	<ul style="list-style-type: none"> • Spotted Deer • Nilgai • Flying Fox • Indian Hedgehog • Andaman & Nicobar Rat • Greater & Lesser Flamingo 	<ul style="list-style-type: none"> • Blue & Red Vanda • Pitcher Plant • Neelakurinji • Mishmi Teeta • Tree Turmeric 	<ul style="list-style-type: none"> • Vicugna Vicugna - Camels • Acis Kuhli - Deer • Canis Lupus - Wolf • Ursus Arctos- Brown Bear



SYLLABUS: GS 2: *Government policies & Interventions*
Newspaper : The Hindu, **Page No :** 6

Wildlife Protection Amended Act 2022 :

100+ NPs & 560+ WS =
5% Protected area

29% Tiger & 67% Elephants remain
Outside the protected areas

Removal of Classification of
"Vermine Species"

Only Centre can regulate trade of
"Invasive Alien species"

Persisting
Issues in the
Act

Section 43 : Allows use of Elephant
for Religious & other purposes

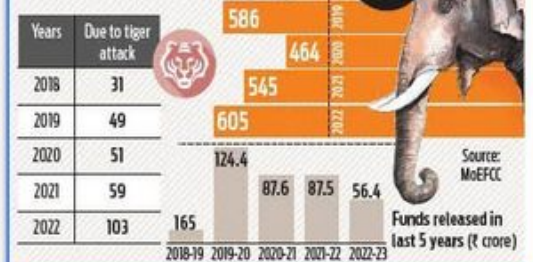
Invasive plant species threaten
66% of India's natural areas

by British Ecological Society

Bahraich district administration
builds shelter homes to protect
villagers from wolf attacks

Updated - September 07, 2024 10:07 pm
IST - Bahraich

Human casualties
due to animal attacks



Human - Animal Conflict :

Steps to Take

**Non - Lethal
Deterrents :**
Fences, strobe
lights or
guardian dogs

**Strict
implementation
of Buffer Zones
around
protected areas**

**Early Warning
systems to alert
communities**

**Gandhi's 7
Social sins :
Commerce
without
Morality**

**AWBI v. A.
Nagaraj :**
"Animals have
right to live with
dignity &
without
unnecessary
pain"

With less than 150 Great
Indian Bustards remaining in
the wild, what's driving their
extinction?

The Centre has told the SC that it is not possible to comply with the court's order to put power lines underground, even as they crisscross the Godavans' habitat. What exactly is the nature of the threat, and what has the Centre argued?



SYLLABUS: GS 3: *Environment Conservation*
Newspaper : The Hindu, **Page No :** 14

Loss of Snow in Gangotri Glacier

Context of News :

The story so far:

A recent study has reconstructed the long-term discharge flow of the Gangotri Glacier System (GGS), the source of the upper Ganga basin which contributes to the waters of the Bhagirathi river in the central Himalayas. In the wake of climate change, glaciologists the world over have been studying the impact of glacier melt.

Snow & ice reserves of Hindu - Kush Himalayas

Critical source of Water :
Indus, Ganga & Brahmaputra

EWE : Altered cryosphere & hydrological cycle

High resolution glacio- Hydrological model : Spatial Process in Hydrology

Rainfall runoff, Evapo - transpiration & Loss of ice

Loss of Snow in Gangotri Glacier

Area of Research :

Which glaciers make up the GGS?

The study area of the GGS comprises the glaciers Meru (7 km²), Raktavaran (30 km²), Chaturangi (75 km²) and the largest glacier Gangotri (140 km²). The GGS covers an area of 549 square km (km²) spanning an elevation range between 3,767 metres and 7,072 metres. About 48% of the GGS is glacierised. The GGS receives precipitation from the western disturbances during winter (October to April) and from the Indian summer monsoon during summer (May to September). The average seasonal rainfall (May to October) is around 260 mm, with an average mean temperature of 9.4°C for the period 2000-2003.



Retreat of the Gangotri Glacier



Findings :

- **NASA Earth Observatory :** 1971 - 147 glaciers v. 2024 - 37 glaciers remain
- **Snow melt & Glacier melt = 85% of water discharge from Glaciers**
- **Temperature increased but Snow melt declined?**
- **Decrease in Precipitation & Snow coverage area**



SYLLABUS: GS 3: Environment Conservation
Newspaper : The Hindu, Page No : 14

Loss of Snow in Gangotri Glacier

MAY DAY IN THE WORLD'S THIRD POLE

The Himalaya is perhaps the world's most vulnerable region to climate change after the poles

The climate prognosis

Best case scenario

If emissions are slashed

- 1.5°C global average surface warming
- 2.1°C temperature rise in Hindu Kush Himalaya
- A third of ice lost by 2100

Limited public action

If emissions are contained

- 2°C global average warming
- 2.7°C temperature rise in HKH
- Half of the ice lost by 2100

Business as usual

If emissions are not checked

- 4-5°C global average warming
- 5-6°C temperature rise in HKH
- At least 2/3 of ice lost by 2100

Overview of the Hindu Kush Himalaya

Total area

4.2 million sq. km

Countries

Afghanistan, Pakistan, India, China, Nepal, Bhutan, Myanmar, Bangladesh

Major river basins

Amu Darya, Brahmaputra, Ganga, Indus, Irrawaddy, Mekong, Salween, Tarim, Yangtze, Yellow River

River basin population (in million)

580 Ganga
268 Indus
68 Brahmaputra

Biodiversity

4 global hotspots
35,000+ plant species
200+ animal species

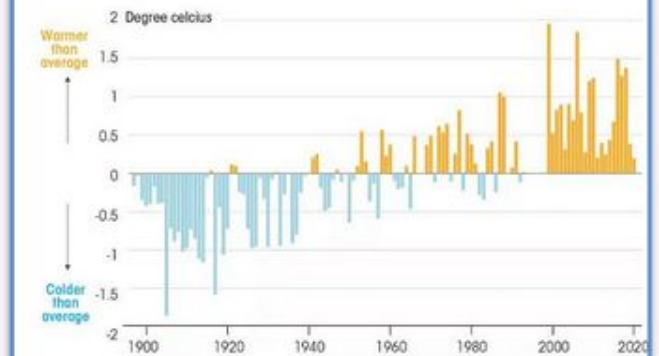
Estimated number of people at disaster risk in India

337.8 million

Source: ICIMOD

HIMALAYAN MELTDOWN

Himalayan region has warmed by 1.6°C above pre-industrial level, with temperature rise in western Himalayas nearing 2°C. By contrast, average global temperature rise has been 1.1°C



Note: Temperatures were measured at Mukteshwar Kumon station, 129 km south of the Nanda Devi glaciers
Source: NASA's Goddard Institute for Space Studies. Data analysis by Mylene Jacquemart

Loss of Snow in Gangotri Glacier

Steps Taken :

HIMAP Launched by ICIMOD

World Glacier Monitoring Services by UNESCO

2025 : International Year for Glacier Preservation

National Mission for Sustaining Himalayan Ecosystem

Research Station "Himansh" in Chandra basin

Steps to Take :

Community participation

Reforestation with Native tree species

Declaration of Ecologically Sensitive Areas

Improvement of Water Storage Infrastructure

Net Zero by 2050



SYLLABUS: GS 1: Significant Events from the middle of 18th century to present times
Newspaper : The Indian Express, Page No : 13

New Shades of Swadeshi

Context of the News :

DAYS BEFORE the 50% "Trump tariffs" kicked in on an array of Indian exports, PM Narendra Modi repeated his message of "aatmanirbhar Bharat" and "swadeshi". In India, these words date back to the freedom struggle. Before Mahatma Gandhi burst on to the political scene, swadeshi (from one's own land) rose as a powerful idea in 1905, when Indians protested against the Partition of Bengal by the British.

HH Wilson : "Had these duties not imposed, Mills of Manchester would have stopped & not set again in motion even by power of steam"

De - Industrialisation of India :

Industrialisation of Britain

Commercialisation of Agriculture

Exploitative Revenue policies

Imperial Preferences & Calico Act 1720

RC Dutt : 2/3rd of clothes worn by Indians has British Tag

New Shades of Swadeshi

Economic Critique of British Rule :

Swadeshi Movement :

Namdhari Movement by Bhagwat Jawahar Mal & Baba Balak Singh

Partition of Bengal by Lord Curzon

7th August 1905 : Town Hall Meeting :
Boycott of Manchester cloth & Liverpool Salt

Benaras Session 1905 :
Official declaration of Swadeshi Movement

Surat Split 1907

Poverty & Un - British rule in India & England's debt to India

Dadabhai Naoroji

Economic History of India

RC Dutt

Poverty Problem in India

PC Ray

Essays on Indian Economics

MG Ranade

Unhappy India

Lala Lajpat Rai

Prosperous British India

William Digby

New Shade of Swadeshi



SYLLABUS: GS 1: Significant Events from the middle of 18th century to present times
Newspaper : The Indian Express, Page No : 13

New Shades of Swadeshi

episode from 1921, when Gandhi was addressing a student gathering in Madurai. Some students complained that khadi was too expensive, Chandra wrote. Gandhi replied that the answer lay not in wearing foreign clothes but wearing fewer clothes, and announced that he was discarding the dhoti and kurta and would now wear only a "langot (loin cloth)". Until his assassination in 1948, he stuck to this vow.

Gandhi & the idea of Swadeshi

- **Non - Cooperation Movement 1920 - 22**
- **Charkha : Symbol of resistance against Colonialism**
- **1921-22 : Import of foreign clothes dropped from ₹1020 million to ₹570 million**
- **Shashi Tharoor in Era of Darkness : 62% of clothes sold were made by Indians by 1936**



SYLLABUS: Prelims: *Biotechnology & Health related issues*
Newspaper : The Hindu, **Page No :** SCIENCE

Context of the News :

These particles persist for decades or longer, accumulate in water bodies, and attract other pollutants like heavy metals, antibiotics, and toxic chemicals. They provide sticky surfaces where bacteria thrive, and recent research shows such surfaces can even host microbes carrying antibiotic resistance genes (ARGs). This raises fears that plastic waste may not only choke ecosystems but also help spread antimicrobial resistance (AMR).

Issue of Plastic Waste

- **Plastic : Non - Biodegradable synthetic polymer**
- **Microplastics (<5 mm) & Nanoplastics (<1 mm)**
- **Sundarbans Case Study : World's largest mangrove forest = Receive 3 billion microplastics particles every day**
- **Microbes on Microplastics = Exposed to Antibiotics & Metals**
- **Enzyme PETase in Ideonella Sakaiensis = Degrade Polyethylene used in bottles**
- **BUT = Resistant to Antibiotics**

Antimicrobial Resistance (AMR) :

- **It occurs when Microbes mutate or adapt in a manner that can render treatments ineffective**
- **Overuse & misuse of antibiotics by Humans & Animals**
- **LANCET Study : 39 million estimated deaths by AMR by 2050**
- **World Bank : \$100 Trillion economic loss**

India's Plastic Problem

- **NITI Aayog : 1.5 Lakh tonnes of garbage daily**
- **70 thousand tonnes waste ends up in Natural environment**
- **Banning of 19 categories of SUP under PWM Rules 2021**
- **Extended Producer Responsibility under PWM Rules 2024**



SYLLABUS: Prelims: *Biotechnology & Health related issues*
Newspaper : The Hindu, Page No : SCIENCE

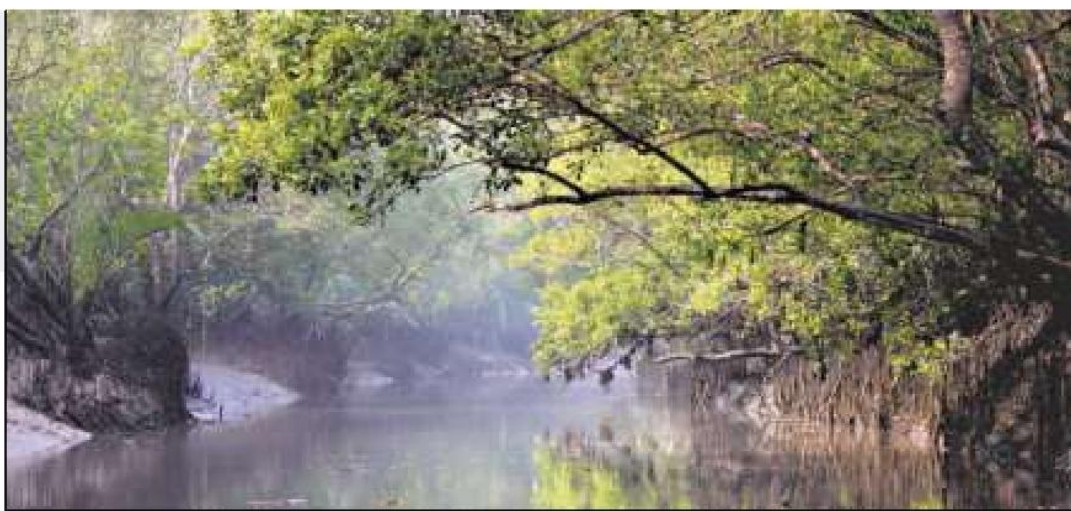
Dangerous treasure

The Sundarbans' floating bacterial community has both the genetic tools to degrade plastics and to resist antibiotics

- The Sundarbans' floating bacterial community contains hundreds of genes to degrade many plastic polymers

- Metagenomic sequencing revealed 838 plastic-degrading enzyme hits, with polyethylene glycol degradation genes being most abundant

- Plastic-degrading enzyme abundance peaked during the monsoon, reflecting influx of nutrients, microbes, microplastics from rivers



The Sundarbans' microbial community has already adapted to deal with a flood of plastic waste. ISTOCK PHOTO

- Microbes carrying plastic-degrading genes also frequently possessed antibiotic resistance and metal resistance traits

- Network analysis showed strong associations between plastic-degrading enzymes, antibiotic resistance genes, metal resistance genes

- While offering natural solutions for plastic breakdown, the microbes risk amplifying antimicrobial resistance and threatening public health



SYLLABUS: Prelims: Types of Crops
Newspaper : The Hindu, **Page No : 4**

Context of the News :

Honey on high

In Kashmir's Pulwama, the CSIR-IIIM is producing India's first mono-floral lavender honey, a kilogram of which sells for up to ₹6,000. Soon, India may join the high-end international lavender honey market



Farmers working on lavender shrubs in Sirhama village, 55 km from Srinagar. IMRAN NISSAR

Production of Lavender :

- **Use of Lavender :** Cosmetics, Aromatherapy, Perfume & Food
- **Dalwai Committee :** Double farmers income
- **J & K =** High Altitude, Temperate climate & "**Karewa**" Soil
- **Economy =** 70% dependent on Agriculture : Apples, Saffron, Almonds

Government's Initiatives :

- **Aroma Mission in 2016 :** 30,000 hectares under CSIR Intervention
- **Pooling of land & Free Lavender saplings**
- **Product Diversification :** Production of Lavender nectar - based monofloral honey

Q1. Regarding the Shanghai Cooperation Organisation (SCO), consider the following statements:

1. It was established in 2001, and India became a member in 2017.
2. Its official languages are English and Chinese.
3. The SCO member countries include Belarus and Iran.

How many of the above statements is/are correct?

- a) Only One
- b) Only Two
- c) All Three
- d) None

Answer: b

Q2. Which of the following species are protected under Schedule I of the Wildlife (Protection) Act, Amendment 2022?

- a) Blackbuck, Asiatic Wild Dog (Dhole), Elephants
- b) Spotted Deer, Nilgai, Flying Fox
- c) Blue & Red Vanda, Pitcher Plant, Neelakurinji
- d) Camels, Deer, Wolf

Answer: a

Q3. Match the following pairs of literary works with their authors:

Works	Authors
A. Poverty and Un-British Rule in India & England's Debt to India	1. RC Dutt
B. Economic History of India	2. MG Ranade
C. Essays on Indian Economics	3. Dadabhai Naoroji
D. Unhappy India	4. Lala Lajpat Rai

Select the correct answer using the codes given below.

- a) A-4, B-1, C-3, D-2
- b) A-2, B-3, C-1, D-4
- c) A-3, B-1, C-2, D-4
- d) A-1, B-2, C-3, D-4

Answer: c

Q4. Regarding plastic pollution, consider the following statements:

1. Plastics are non-biodegradable synthetic polymers.
2. Microplastics are particles less than 5 mm in size.
3. Nanoplastics are particles less than 1 mm in size.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 1, 2 and 3

Answer: d

Q5. Regarding glaciers, consider the following statements:

1. The year 2027 has been designated as the International Year for Glacier Preservation.
2. The World Glacier Monitoring Service functions under UNESCO.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: b





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